USER MANUAL

V210 CABLE TRACKER

www.vdiagtool.com

Safety Information

To ensure your safety and prevent damage to the device or vehicle, please carefully read and follow all instructions in this manual before use.

When operating the device, always verify proper testing procedures and strictly adhere to the instructions provided. As automotive electrical systems may vary, you must assess potential risks and ensure a safe testing environment.

Always observe all safety warnings, use appropriate tools, and disconnect power sources when necessary. Improper operation may result in personal injury, equipment damage, or voided warranty.

Safety Messages

Safety messages use standardized signal words to indicate hazard levels and prevent injuries or equipment damage:

DANGER

Will result in death or serious injury if ignored

Indicates an immediately life-threatening hazard.

WARNING

Could result in death or serious injury if ignored

Indicates a potentially dangerous situation.

Safety Instructions

This manual covers known safety hazards, but cannot anticipate all possible risks. You are responsible for ensuring safe operating conditions and procedures.

DANGER

• Always ventilate the service area when engine is running or use building exhaust removal system if available

• Carbon monoxide is odorless and deadly - can cause loss of consciousness or death

⚠ WARNINGS

• Always keep a fire extinguisher suitable for gasoline, chemical, and electrical fires nearby.
• Never operate or observe the tool while driving—distraction can lead to fatal accidents.
• Keep clothing, hair, hands, tools, and test equipment away from moving or hot engine parts.
• Perform automotive testing only in a safe, controlled environment.
• Ensure proper ventilation—exhaust gases are poisonous.
• Never connect or disconnect test equipment while the ignition is ON or the engine is running.
• Place wheel chocks in front of drive wheels and never leave the vehicle unattended during testing.
• Wear ANSI-approved safety eye protection at all times.
• Exercise extreme caution around ignition coils, distributor caps, spark plugs, and wires—high voltage is present when the engine is running.
• Before testing, ensure the transmission is in P (A/T) or Neutral (M/T) and the parking brake is engaged.
• Keep the scan tool clean and dry; avoid contact with oil, water, or grease. Clean only with a mild detergent and soft cloth.
• Do not modify, disassemble, or expose the tool to extreme temperatures or moisture.
• This tool is not a substitute for professional diagnostic equipment—use with caution.
• The manufacturer is not liable for damages caused by misuse, negligence, or unauthorized modifications.

Legal Information

Trademarks

VDIAGTOOL is a registered trademark of Shenzhen VDIAGTOOL Technology Co., Ltd in the United States and other jurisdictions. All other product names mentioned herein may be trademarks of their respective owners.

Copyright Information

© 2017 Shenzhen VDIAGTOOL Technology Co., Ltd. All rights reserved.

No reproduction, distribution, or transmission of this manual is permitted without express written authorization from VDIAGTOOL. This prohibition applies to all forms of copying including electronic, mechanical, photocopying, and recording.

Disclaimer & Liability Statement

Product Documentation Notice

All illustrations, specifications, and technical data in this manual are for reference only and subject to change without notice.
For the latest documentation, visit:
https://www.vdiagtool.com/support/downloads

Limitation of Liability

VDIAGTOOL expressly disclaims all liability for:
- Any direct, indirect, incidental, or consequential damages
- Loss of profits or business interruption
- Product modifications or unauthorized use

This manual does not:
- Modify existing purchase/lease agreements
- Create additional liabilities for VDIAGTOOL
- Constitute additional product warranties

IMPORTANT:
Always consult this manual before operation, with special attention to all safety warnings. VDIAGTOOL reserves the right to modify product specifications at any time.

Product Support & Training Resources

Technical Support

- Official Website: www.vdiagtool.com
- Support Email: support@vdiagtool.com
- US Hotline: +1-213-355-7171
- Online Form: https://www.vdiagtool.com/support/tech-support

Training Videos
Free product operation videos:
1. Visit Training Center:
https://www.vdiagtool.com/support/training-center
2. Select Circuit Testers category
3. Watch model-specific tutorials

Contents

1. Product Overview.....1
1.1 Specifications.....1
1.2 Tool Description.....1
1.3 Included Parts List.....3
1.4 Battery Replacement.....3
1.4.1 V210 Transmitter Battery Replacement.....3
1.4.2 V210 Receiver Battery Replacement.....3
2. How to Use the Probe.....3
3. Setting the Sensitivity Level.....4
4. Product Features.....4
4.1 Locating Short Circuit.....4
4.2 Locating Open Circuit.....5
4.3 Wire Tracing.....6
4.4 Wire Identification.....8
4.5 General Tracing Procedures.....9
4.5.1 Working with Open Circuits.....9
4.5.2 Working with Short Circuits (and Tracing Circuits).....10
4.5.3 Some Circuit Characteristics that May Affect the Tracing of a Wire.....11
4.6 Special Tracing Procedures.....11
4.7 Wire Bundles and Conduits.....11
4.8 To increase the Pickup Range When Tracing Wires.....12
4.9 Circuits with Multiple Loads and Branches.....13
5. Warranty.....14
6. Contact Us.....14

1. Product Overview

1.1 Specifications

V210 Transmitter	
Operating Voltage	6V - 42V DC
Working Current	0.2A - 0.5A
Operating Temperature	0°C to 60°C (32°F to 140°F)
Storage Temperature	-40°C to 70°C (-40°F to 185°F)
Max Operating Relative Humidity	80%
Max Storage Relative Humidity	50%
Power Source	9V (Powered by 9V Battery)
Dimensions (L × W × H)	73.6 × 61 × 22.15mm (2.89 × 2.40 × 0.87 in)
Weight	63g (0.138 lbs)
Material	ABS
V210 Receiver	
Probe Length	172mm (6.77 in)
Power Source	9V (Powered by 9V Battery)
Working Current	0.2A - 0.5A
Operating Temperature	0°C to 60°C (32°F to 140°F)
Storage Temperature	-40°C to 70°C (-40°F to 185°F)
Max Operating Relative Humidity	80%
Max Storage Relative Humidity	50%
Material	ABS
Dimensions (L × W × H)	184 × 48 × 24mm (7.24 × 1.88 × 0.94 in)
Weight	84g (0.185 lbs)

1.2 Tool Description

①Probe Sensor: Black cylinder to detect electromagnetic signal for the V210 receiver.
②Probe: 6.7" long, flexible, built of coiled steel and equipped with a sensor at the top to fit for congested or difficult areas.
③Speaker: Generates tone when signal is picked up by the V210 receiver.
④On/Off & Sensitivity Rotary Switch: Turn the switch clockwise to power on the V210 receiver and increase sensitivity level; turn anti-clockwise to decrease sensitivity level and power off.
⑤TEST Button: Press and hold TEST button to pick up audio signal.
⑥Red Test Lead: Red test lead of the V210 transmitter.

⑦Black Test Lead: Black test lead of the V210 transmitter.
⑧Mode Switch: Mode switch of the V210 transmitter.
⑨CONT Mode: Switch to CONT mode to test continuity or short circuit.
⑩Power Off: Switch to power off the V210 transmitter.
⑪TONE Mode: Switch to TONE mode to test open circuit or tracing wire.

1.3 Included Parts List

Part	Quanlity
V210 Transmitter	1
V210 Receiver	1
User Manual	1
Packing Box	1

1.4 Battery Replacement

1.4.1 V210 Transmitter Battery Replacement

Open the battery cover at the back of the V210 transmitter, replace the exhausted battery with a new one of 9V (6F22) and reinstall the battery cover.

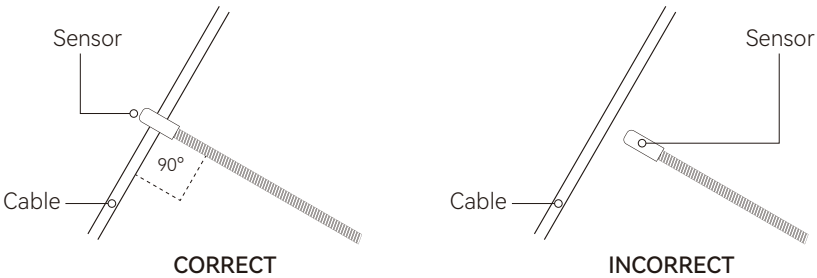
1.4.2 V210 Receiver Battery Replacement

Open the battery cover at the back of the V210 receiver, replace the exhausted battery with a new one of 9V (6F22) and reinstall the battery cover.

2. How to Use the Probe

The probe of the V210 receiver is built of coiled steel equipped with a sensor (black cylinder), and can be bent as needed, in order to reach wires in congested or difficult areas. Depending on the circuit characteristics and the sensitivity setting, the probe's sensor will pick-up the signal from the wire in a wide range of positions.

However, for the best possible range, the V210 receiver's sensor (black cylinder) should be positioned perpendicular (at 90°) to the wire being traced and either above or below it, as shown below:



3. Setting the Sensitivity Level

VDIAGTOOL V210 receiver comes with rotary switch dial to adjust sensitivity level easily which allows technician to choose the degree of sensitivity most suitable to the particular detection being performed.

To turn on V210 receiver or increase sensitivity level:

Switch the rotary switch dial clockwise to turn on the V210 receiver and increase sensitivity level;

To turn off V210 receiver or decrease sensitivity level:

Switch the rotary switch dial anti-clockwise to decrease sensitivity level, and switch it off until you hear a click.

4. Product Features

4.1 Locating Short Circuit

Observe the limits and safety precautions at all times.

(1) Disconnect the power that is connected to the wire being tested, and remove all the loads(for example, remove light bulb from the wire).

(2) Switch the V210 transmitter to "CONT" position, and connect the test leads to the wire.

(3) When the resistance is less than 10k ohm, the LED indicator at the "CONT" position lights up in green and it means the wire is shorted.

4.2 Locating Open Circuit

(1) Set the V210 transmitter to "TONE", and the red LED indicator lights up. If the red LED indicator does not light up, please check the battery.

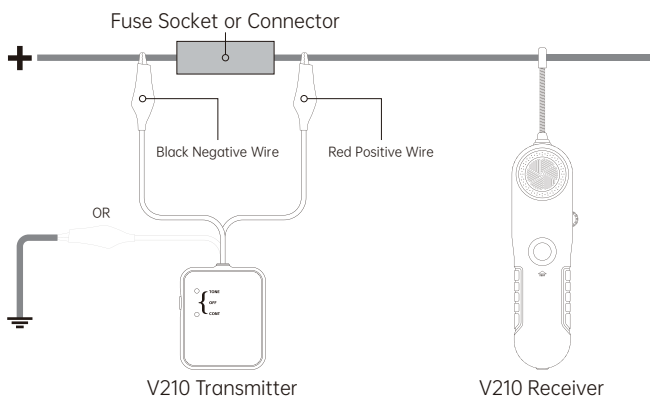
(2) Switch on the V210 receiver and set its rotary switch to the middle position. Press and hold the "TEST" button and move the probe sensor close to the test leads of the transmitter, the V210 receiver receives signal and generates a tone. That means the tool works correctly.

(3) Connects the black test lead to the circuit's positive supply (or to the negative supply for vehicles with positive supply connected to chassis). Connect the red test lead to the wire being tested. A fuse socket (with blown fuse removed), a connector provides a convenient hook up.

(4) Switch on the V210 receiver and set the rotary switch to the middle position. Press and hold the "TEST" button and sweep the wire slowly with the probe sensor, ensuring the probe is perpendicular and above or below the wire being traced and as close as possible to it.

(5) Follow the wire or check it at different points, starting from the transmitter and moving towards the load (accessory, light etc), observing the positioning of the probe as indicated above.

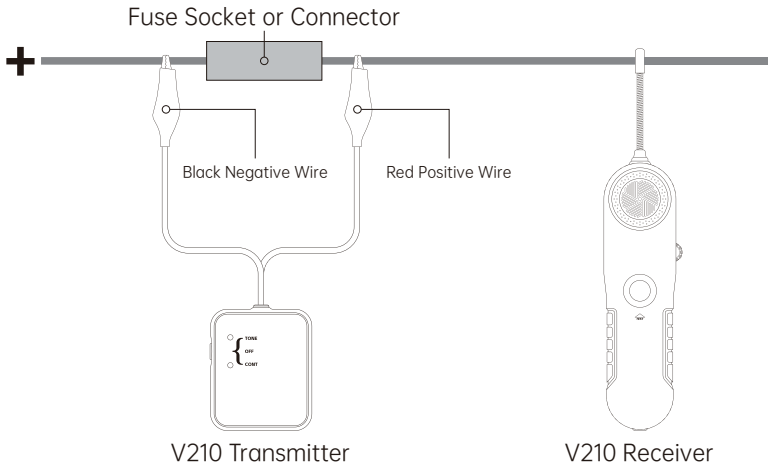
(6) Continue this procedure when the tone indicates the integrity of the circuit. When the tone stops, it means the probe has just passed the open point, breaker or bad connection in the circuit.

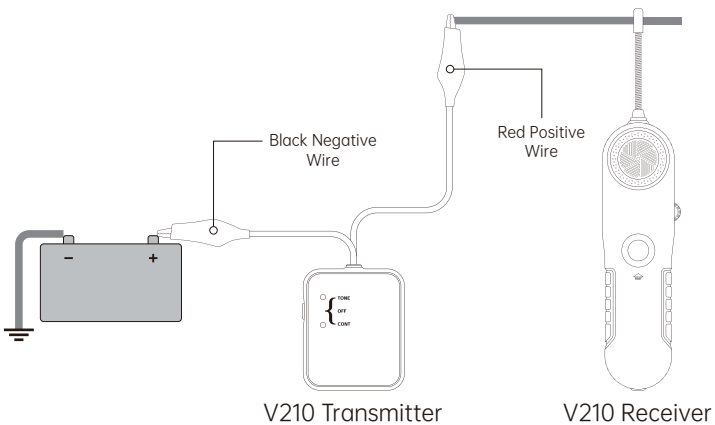


(7) If it's difficult or unable to pick up any signal, please increase the sensitivity and try again.
(8) Double check by positioning the probe before and after the suspected point. If the open circuit point has been found, the tone will show circuit integrity on one side, and not on the other. At this point, where the audio signal stops, you have found the open circuit.
(9) When you have finished locating the open circuit point, disconnect the test leads' connection, set the transmitter to "OFF" position and loose the "TEST" button.

4.3 Wire Tracing
Note: Observe the limits and safety precautions at all times.

(1) Set the switch of the V210 transmitter to "TONE", the red LED of the transmitter lights up. If the red LED does not light up, please check the battery.
(2) Switch on the V210 receiver, set the rotary switch to the middle position. Press and hold "TEST" button, meanwhile move the probe sensor close to the test lead of the transmitter. Receiver receives the signal and generates tone. If so, it means the unit works correctly.
(3) Connect the black test lead to the circuit positive supply (or to the negative for the vehicles with positive supply connected to chassis). Connect the red test lead to the wire being traced. A fuse socket (with blown fuse removed), a connector provides a convenient hook-up.
(4) Set the switch of the V210 receiver to the middle position. Press and hold the "TEST" button, meanwhile move the probe sensor as close as possible to the wire to be traced. The probe sensor should be placed perpendicular(90°) to the wire and either above or below it.
(5) The V210 receiver gives audio signal. Trace the wire by following the tone of the receiver. If you move the probe sensor away from the wire, the tone will decrease and then disappear.
(6) If the V210 receiver is difficult or impossible to pick up any signal, please increase the sensitivity level and try again, and double check the suspected points.





(7) When you have finished tracing the wire, disconnect the test leads, set the V210 transmitter to "OFF" position and loose the "TEST" button.

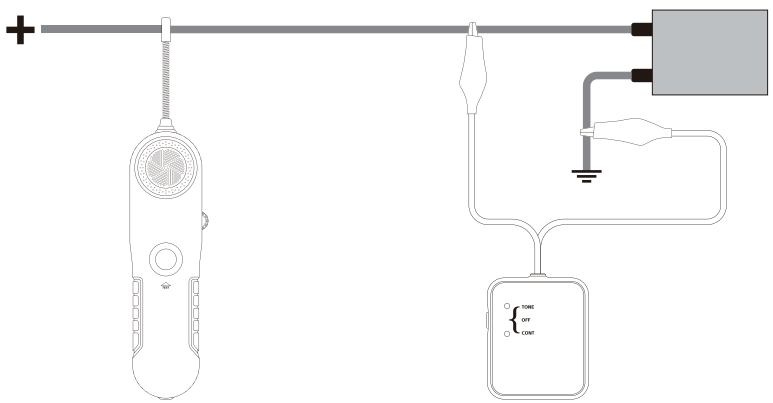
For step by step directions: please refer to point 4.1 Locating Short Circuits, for some hints and specific differences, refer to the notes below:

The type and size of load connected to the circuit (impedance or resistance to ground) determines the amount of current allowed to

flow in the circuit. Small loads (low voltage lamps, electronic systems, etc.) will reduce the range of the V210 receiver accordingly. In cases where the full range of the V210 receiver is required to follow the wire, it may prove advantageous to use one of the two methods described below:

• **Tracing wires downstream (from supply to load):** replacing the load for a full short circuit allows the V210 receiver to work at its maximum capabilities. Before proceeding, remove all electrical power from the circuit, connect the V210 transmitter in series with the wire to trace, short circuit the load to ground, then reconnect power and follow instructions in section 4.1 Locating Short Circuits.

• **Tracing wires upstream (from load to supply):** If more convenient, wires can also be traced the other way around, by replacing the load with the V210 transmitter. To do this, first remove power from the circuit, disconnect the load and connect the V210 transmitter in its place. Apply power to the circuit and follow instructions in section 1.8 Locating Short Circuits.



V210 Receiver V210 Transmitter

4.4 Wire Identification

Note: Observe the limits and safety precautions at all times.

(1) Set the switch of the V210 transmitter to “TONE”, the red LED indicator will light up. If the red LED does not light up, please check the battery.

(2) Switch on the V210 receiver, set the rotary switch in middle position. Press and hold "TEST" button, meanwhile move the probe sensor close to the test lead of the transmitter.

• **For identifying wires with load connected:** Connect the V210 transmitter as described in section 2.8 Locating Short Circuits to the circuit to be identified, then proceed to scan all suspected wiring with the V210 receiver probe sensor until the tone is at its maximum. In the case of tightly packed wires (bundles, conduits, etc.), it may be necessary to spread these apart to facilitate the identification process of a particular wire.

• **For identifying wires without load connected:** Connect the V210 transmitter as described in section 4.2 Locating Open Circuits to the circuit to be identified, then proceed to scan all suspected wiring with the V210 receiver probe sensor, until the tone is at its maximum. In the case of tightly packed wires (bundles, conduits, etc.), it may be necessary to spread these apart to facilitate the identification process of a particular wire.

4.5 General Tracing Procedures

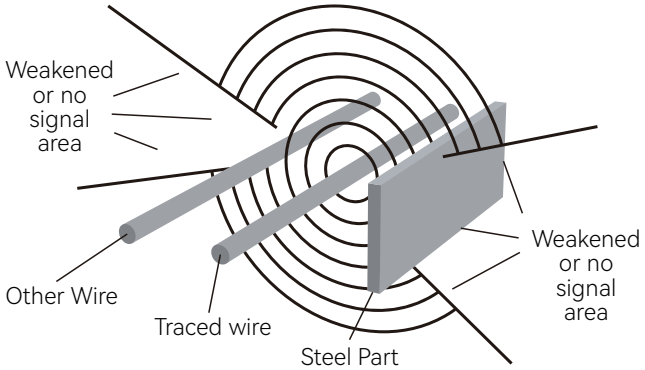
Short and open circuit operation – Differences:

The V210 uses two different types of signals to trace either short or open circuits. Understanding its differences, as explained in the following paragraphs will allow you to make the most effective use of this versatile tool.

4.5.1 Working with Open Circuits

On detection of an open circuit, the V210 transmitter injects a special radio signal into the circuit, which can be picked up by the V210 receiver probe sensor.

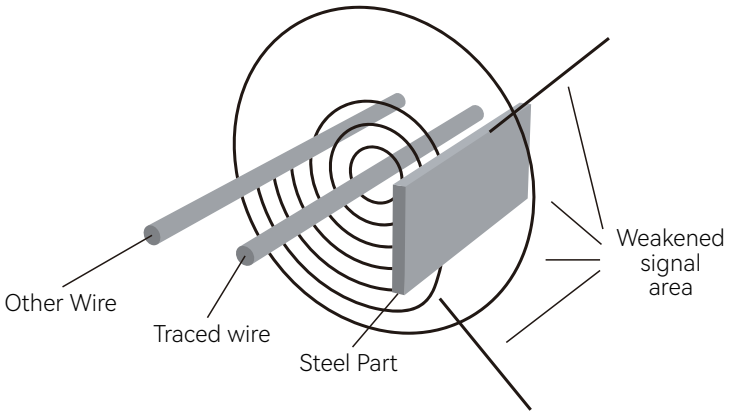
When tracing an open circuit, keep in mind that RF (radio frequency) signals injected in the faulty wire being traced, will be easily absorbed by any other conductor nearby. (e.g.: other wires, metal frames). The effect of this absorption may vary from a reduction in the V210 receiver's range, to a total shielding of the signal with no detection being possible at all.



In order to avoid confusing a shielded portion of the faulty wire with the actual fault on it, the circuit should be checked on in several places to confirm that no signal is detected on the other side of the suspected faulty section.

4.5.2 Working with Short Circuits (and Tracing Circuits)

When the V210 transmitter detects a short circuit (or closed circuit), it injects pulses of electrical current in the wires, which generate magnetic fields. Unlike radio signals, magnetic fields are not easily absorbed by nearby conductors and therefore can be picked up by the V210 receiver probe sensor in a wider range of situations.



4.5.3 Some Circuit Characteristics that May Affect the Tracing of a Wire

• Electromagnetic loop size and geometry, etc. may affect the range of the V210 receiver. For example for circuits in which the live and ground (return) wire run parallel and close to each other in the same circuit, the two magnetic fields interaction may weaken the signal, thereby reducing the V210 receiver range.

• Wires enclosed or tightly lining the metal frame or body of the vehicle, (i.e.: door frames), have the same effects as having the live and ground wires running in parallel in the same circuit since, the metal frame or vehicle body will be acting as a ground wire. Another unfavorable factor may be due to the channeling effect steel parts have on magnetic fields. These two cases, individually or combined, will reduce and sometimes impede the wire sections affected.

Hint: Whenever possible the short circuit mode of operation should be used, because it provides with the best tracing capabilities.

4.6 Special Tracing Procedures

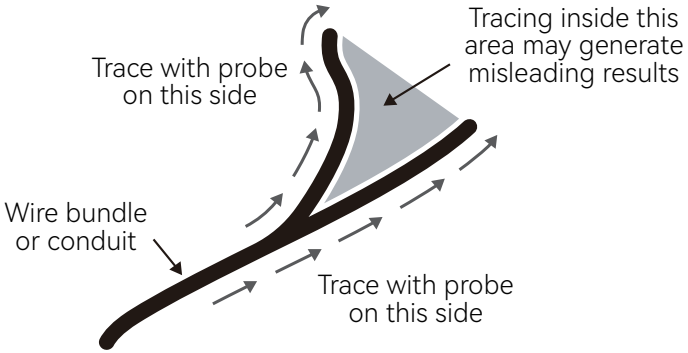
In all cases, first set the V210 receiver at a lower sensitivity level and increase it as necessary. Proceed as indicated in the sections of this User's Manual applicable to your situation.

• Always after locating a probable fault area, verify several points in the wires on both sides (before and after) the suspected area. The signal should be present at only one side of the fault (open or short). This procedure will help avoid confusing a signal loss with the actual trouble point.

4.7 Wire Bundles and Conduits

Special care should be given in the case of tracing a wire inside a bundle or conduit when there is a split. In this case it may be possible to follow the wrong branch for a short distance and still receive a positive audio/ visual indication.

• To avoid following the wrong path, which could happen if the V210 receiver probe sensor picks up the signal from the other nearby branch of the circuit, the branches should be swept maintaining the probe sensor outside the apex area between the split, as shown below:



• Careful attention should be paid to the beeping and flashing speed of the V210 receiver unit indicators, as these provide the necessary feedback to evaluate the proximity of the probe sensor to the wire being traced.

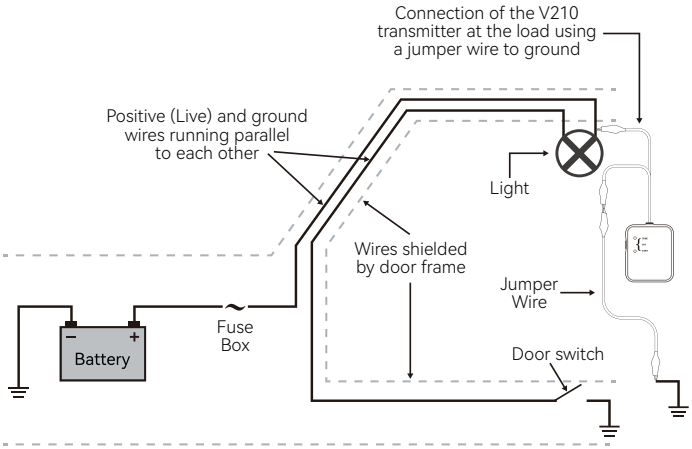
4.8 To increase the Pickup Range When Tracing Wires

When tracing or identifying wires connected to a lightly loaded circuit (low currents), pickup range is reduced significantly. A possible solution is, after connecting the V210 transmitter in series with the circuit to trace, is to replace the load (light bulb, module, etc.) with a direct connection to ground. This allows the V210 transmitter to inject a more powerful signal which is easier to detect.

• For the cases in which it is suspected the layout of the wires is the cause of a very difficult to pick up or weak signal, a dramatic increase of the range can be accomplished by “spreading” the circuit.

• The spreading the circuit is achieved by connecting a jumper wire between the live wire (preferably at a termination point in the circuit such as a light bulb socket, switch, etc.), and a ground point somewhere else in the vehicle.

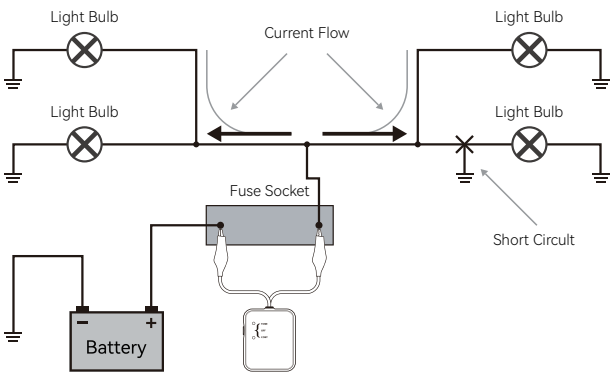
This last method should be used only as “last resource” and with the V210 receiver set to a lower sensitivity, as it could make the pinpointing of the precise location more difficult due to the much increased range.


Connection of the V210 transmitter at the load using a jumper wire to ground
Positive (Live) and ground wires running parallel to each other
Light
Wires shielded by door frame
Jumper Wire
Fuse Box
Battery
Door switch

• Always verify that the V210 transmitter is connected in series with the circuit being tested and that its red indicator light is on, as this confirms a proper connection and will limit the amount of current flowing in the circuit.

4.9 Circuits with Multiple Loads and Branches

When tracing circuits connected to, or which are powering multiple loads and/or branches, and when these circuits are active or live, the bulk of the current injected into the circuit by the V210 transmitter will be directed to the shorted branch of the circuit. However smaller amounts of current (or stray currents) will flow to the other branches as long these provide a path to ground (i.e. close the circuit).



• These stray currents present in the non-shorted branches of the circuit, and depending on the circuit configuration and physical layout of the wires, could be picked up by the V210 receiver, making the tracing procedures confusing, and even misleading.
• The simplest and most effective way to deal with these cases, is to disconnect or remove all the loads from the circuit being traced (i.e. removing light bulbs in example shown above.)

5. Warranty

Limited Three Years Warranty

VDIAGTOOL warrants the V210 product against defects in materials and workmanship for thirty-six (36) months from the date of delivery to the original purchaser for commercial or business use. This warranty does not cover damage resulting from misuse, unauthorized modification, improper maintenance, or operation outside specified conditions. VDIAGTOOL's sole liability shall be limited to repair or replacement of defective components at its discretion. Consequential, incidental, or other damages are expressly excluded. Some jurisdictions may not permit certain limitations of liability.

6. Contact Us

Warranty & Support

Email: support@vdiagtool.com
Website: www.vdiagtool.com

For wholesale business or become our distributors:
Email: sales@vdiagtool.com

Invent with us, test products before they hit market, help us make better products for everyone:
Email: inventers@vdiagtool.com

Create social media content, post online and help our community:
Email: marketing@vdiagtool.com

Follow Us on Social Media

Facebook Page: Search for "vdiagtool"
Facebook User Group: Search for "VDIAGTOOL OFFICIAL User Group"
Instagram: Search for "vdiagtool_official"
TikTok: Search for "vdiagtool_us"
YouTube: Search for "Vdiagtool Official"